

ADVANCED FIRTREE AND BROACH SLOT FORMS
FOR TURBINE STAGE 3 BUCKETS AND ROTOR WHEELS

ABSTRACT OF THE DISCLOSURE

A turbine bucket and wheelpost assembly reduces the number of buckets in the third stage of the turbine from ninety-two to ninety while reducing stresses at the assembly points of the buckets and wheelposts. The buckets and wheelposts are formed with complementary fillets and tangs that provide for the insertion of the bucket into the broach slot between two wheelposts. The angles of the fillets on both the bucket and wheelpost range from 50° to 59° . The upper surface of the wheelpost is scalloped to reduce weight and the tangs and fillets of both the bucket and wheelpost are formed from curved and straight surfaces to reduce stresses on the assembly.